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10/544,280	08/03/2005	Robert Hughes Jones	67.0977 US PCT	1320

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EXAMINER	
HUGHES, SCOTT A	
ART UNIT	**PAPER NUMBER**
3663	

MAIL DATE	DELIVERY MODE
08/17/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/544,280	JONES, ROBERT HUGHES	
	Examiner	Art Unit	
	Scott A. Hughes	3663	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *08 June 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-10 and 12* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-10 and 12* is/are rejected.

7)☒ Claim(s) *2-10* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *08 June 2007* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Arguments

Applicant's arguments and amendments filed 6/8/2007 with respect to the rejections under 35 USC 112 have been fully considered and are persuasive. The rejections under 35 USC 112 are withdrawn.

Applicant's arguments and amendments filed 6/8/2007 with respect to the rejections under 35 USC 101 have been fully considered and are persuasive. The rejections under 35 USC 101 are withdrawn.

Applicant's arguments filed 6/8/2007 with respect to the rejections under 35 USC 102 have been fully considered but they are not persuasive.

Applicant's drawing filed 6/8/2007 is sufficient to overcome the objection to the drawings.

Applicant's amendment to claim 6 is sufficient to overcome the objection to claim 6.

Applicant argues that the references are not pertinent to the present invention. Applicant argues that the parameters are known while the parameters of the present invention are unknown. Applicant argues that in the references, the compressional wave velocity Vp and the shear wave velocity Vs are determined from a standard seismic survey. Applicant argues that the present invention assumes that at least the ratio of Vp/Vs is known. This argument is not persuasive as the claim language does not state the ratio of Vp/Vs is assumed to be known and cannot be found from standard surveys. Further, assuming the ratio to be kwon does not preclude determining the

velocities from a standard survey and using these determined velocities to find a known ratio Vp/Vs. Also, applicant has not shown that the ratio that is assumed to be known isn't based on data taken from prior surveys.

Applicant argues that the references disclose distinguishing between events which can be attributed to P waves and events that can be attributed to S waves. Applicant argues that the present invention is concerned with picking of estimating arrival time in the respective P or S wave data. This argument is not persuasive because applicant does not say why the cited portions of the references do not also perform this function. Even if the references distinguish between events that can be attributed to P waves and S waves, that does not preclude them from also performing the steps of picking estimated arrival times for the P and S wave data. Since the references (see the cited portions) do this step as well, they meet the claim limitations.

Applicant argues that the references make use of travel times, and therefore do not calculate an estimate time or arrival. This is not persuasive, because the travel times of the references include estimated arrival times (time at which the waveform arrives at the receiver, or end of the travel time from the source to the receiver). Applicant argues that the references, using travel time, assume that the origin is a parameter that is known with great accuracy. Although the origin time may be known, there is still some uncertainty in the origin time and therefore it meets the claim limitation of the estimated time of origin of the seismic event.

Applicant's arguments with respect to steps in the references that are not part of the claim language are persuasive. As long as the references teach applicant's claimed

steps, they meet the claim limitations. Any other teachings in the references that are not in applicant's invention are irrelevant since the references meet the claim limitations.

Applicant's argument that the use of a time of origin derived from data registered at one receiver to determine the time of arrival of an event at a second receiver is neither disclosed nor suggested in any of the references is not persuasive. The references use origin data from one receiver to determine the velocities Vp and Vs. The ratio of these velocities is then used in determining arrival times of waves at other receivers.

Applicant argues that the invention assumes knowledge as given, whereas the references disclose background on how to establish the knowledge. This argument is not persuasive, as it is not directed to the limitations in the claims and the cited portions of the references. Even if the references determine certain knowledge that applicant assumes to be given, they still perform the steps claimed in applicant's claim limitations.

Applicant has not specifically pointed out, using specific limitations from the claims and the cited portions in the references relied to teach these limitations, why the references do not meet all limitations. Applicant appears to be making general arguments relating the disclosure of the invention to the disclosures of the inventions. This is not persuasive since it is only the language and scope of the claim limitations, and not further details in applicant's specification on these limitations, that the references must meet.

Further, applicant has not responded to the argument that the limitations are essentially method limitations or statements of intended or desired use. Applicant is claiming an apparatus, but the limitations of the claims are directed to methods of use and not the structure of the apparatus. Applicant's "adapted to" and "for adapting" statements contain the language that applicant is arguing above. However, as stated in the previous office action, these limitations are not given weight since they are statements of intended use or method limitations. Since applicant has not addressed this issue by having limitations directed to structure in the apparatus claims, the arguments with respect to claims 1-11 are not persuasive. The references have applicant's only claimed structure of a data processing apparatus, data processor and receiving stations in claims 1-11, and therefore meet applicant's claim limitations.

The "apparatus for," "adapted to" and "for adapting" clauses of claims 1-11 are essentially method limitations or statements or intended or desired use. Thus, these claims as well as other statements of intended use do not serve to patentably distinguish the claimed structure over that of the reference. See In re Pearson, 181 USPQ 641; In re Yanush, 177 USPQ 705; In re Finsterwalder, 168 USPQ 530; In re Casey, 512 USPQ 235; In re Otto, 136 USPQ 458; Ex parte Masham, 2 USPQ 2nd 1647.

See MPEP § 2114 which states:

> A claim containing a "recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from the prior art apparatus" if the prior art apparatus teaches all the structural limitations of the claim. Ex parte Masham, 2 USPQ 2nd 1647
>
> Claims directed to apparatus must be distinguished from the prior art in terms of structure rather than functions. In re Danly, 120 USPQ 528, 531.

Apparatus claims cover what a device is not what a device does. Hewlett-Packard Co. v. Bausch & Lomb Inc., 15 USPQ2d 1525, 1528.

As set forth in MPEP § 2115, a recitation in a claim to the material or article worked upon does not serve to limit an apparatus claim.

Claim Objections

Claims 2-10 are objected to because of the following informalities:

The claims do not show the proper markings for the amendments made to the claims. Applicant shows the deleted limitation of "Data processing means" with strikethrough, but does not show the added limitations of "The apparatus" using underline.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-4, 6-10, and 12 are rejected under 35 U.S.C. 102(e) as being anticipated by Garotta (6639871).

With regard to claim 1, Garotta discloses data processing apparatus for calculating an estimated time of arrival of a seismic or microseismic P or S wave at a sensor location, comprising a data processor (Column 1) adapted to:

- calculate an estimated time of origin for the seismic or microseismic event generating the P and S waves, based on a P to S wave velocity ratio and picked arrival times of the P and S waves at a sensor station other the one for which the estimated time of arrival of the P or S wave is to be calculated (Column 1, Line 25 to Column 2, Line 46; Column 3, Line 1 to Column 4, Line 52).
- calculate the estimated time of arrival of the P or S wave, based on a P to S wave velocity ratio, the estimated time of origin of the seismic or microseismic event and, where the estimated arrival time of a P wave is to be calculated, a picked arrival time of the S wave at the sensor station for which the estimated arrival time of the P wave is being calculated or, where the estimated arrival time of an S wave is to be calculated, a picked arrival time of the P wave at the sensor station for which the estimated arrival time of the S wave is to be calculated (Column 1, Line 25 to Column 2, Line 46; Column 3, Line 1 to Column 4, Line 52).

With regard to claim 2, Garotta discloses the data processor being adapted to calculate estimated arrival times for both the P and S waves at a sensor station (Column 1, Line 25 to Column 2, Line 46; Column 3, Line 1 to Column 4, Line 52).

With regard to claim 3, Garotta discloses the data processor being adapted to calculate a plurality of estimated times of arrival of the P and/or S waves (Column 1, Line 65 to Column 2, Line 45) at a sensor station, based on a plurality of estimated times of origin for the seismic or microseismic event calculated from the picked arrival times of the p and S waves at a plurality of sensor stations other than the one at which the estimated times of arrival are to be calculated (Column 1, Line 25 to Column 2, Line 46; Column 3, Line 1 to Column 4, Line 52).

With regard to claim 4, Garotta discloses that the data processor is further adapted to display the picked arrival times and estimated arrival times in relation to each other such that the clustering pattern of the arrival times can be analyzed (Fig. 2).

With regard to claim 6, Garotta discloses the data processor being adapted to calculate one or more estimated times of arrival for the P and/or S waves at each sensor station in a network of a sensor stations, wherein for each sensor station the necessary estimated time or times of origin are calculated from the picked P and S waves at one or more of the other stations in the network (Column 1, Line 25 to Column 2, Line 46; Column 3, Line 1 to Column 4, Line 52).

With regard to claim 7, Garotta discloses that the data processor is adapted to receive seismic data from the sensor stations to pick arrival times for the P and S wave at each sensor station based on the seismic data (Column 1, Line 25 to Column 2, Line 46; Column 3, Line 1 to Column 4, Line 52).

With regard to claim 8, Garotta discloses that with a number of possible arrival times for a wave at a sensor station (Columns 1-2), the data processor is adapted to

compare the possible arrival times with any estimates calculated for the arrival time of the wave at the station in order to an arrival time of the wave at the station (Column 1, Line 25 to Column 2, Line 46; Column 3, Line 1 to Column 4, Line 52).

With regard to claim 9, Garotta discloses that the data processor is further adapted to select or modify one of the possible arrival times in order to arrive at a final picked arrival time based on the determination (Column 1, Line 25 to Column 2, Line 46; Column 3, Line 1 to Column 4, Line 52).

With regard to claim 10, Garotta discloses that the data processor is adapted to indicate which of the possible arrival times should be selected or modified in order to arrive at a final picked arrival time based on the determination (Column 1, Line 25 to Column 2, Line 46; Column 3, Line 1 to Column 4, Line 52).

With regard to claim 12, Garotta discloses a method of calculating an estimated time of arrival of a seismic or microseismic P or S wave at a sensor station, the method comprising the steps of:

- calculating an estimated time of origin for the seismic or microseismic event generating the P and S waves, based on a P to S wave velocity ratio and picked arrival times of the P and S waves at a sensor station other the one for which the estimated time of arrival of the P or S wave is to be calculated (Column 1, Line 25 to Column 2, Line 46; Column 3, Line 1 to Column 4, Line 52).
- calculating the estimated time of arrival of the P or S wave, based on a P to S wave velocity ratio, the estimated time of origin of the seismic or

microseismic event and, where the estimated arrival time of a P wave is to be calculated, a picked arrival time of the S wave at the sensor station for which the estimated arrival time of the P wave is being calculated or, where the estimated arrival time of an S wave is to be calculated, a picked arrival time of the P wave at the sensor station for which the estimated arrival time of the S wave is to be calculated (Column 1, Line 25 to Column 2, Line 46; Column 3, Line 1 to Column 4, Line 52).

Claims 1-10 and 12 are rejected under 35 U.S.C. 102(e) as being anticipated by Zhang (US20030021184).

With regard to claim 1, Zhang discloses data processing apparatus for calculating an estimated time of arrival of a seismic or microseismic P or S wave at a sensor location r1, comprising a data processor (abstract; Pages 7-8) adapted to:

- calculate an estimated time of origin for the seismic or microseismic event generating the P and S waves, based on a P to S wave velocity ratio (G) and picked arrival times of the P and S waves at a sensor station r2,r3 other the one for which the estimated time of arrival of the P or S wave is to be calculated (Figs. 1-5) ([0033]-[0156]).
- calculate the estimated time of arrival of the P or S wave, based on a P to S wave velocity ratio, the estimated time of origin of the seismic or microseismic event and, where the estimated arrival time of a P wave is to be calculated, a picked arrival time of the S wave at the sensor station for

which the estimated arrival time of the P wave is being calculated or, where the estimated arrival time of an S wave is to be calculated, a picked arrival time of the P wave at the sensor station for which the estimated arrival time of the S wave is to be calculated (Figs. 1-5) ([0033]-[0156]).

With regard to claim 2, Zhang discloses the data processor being adapted to calculate estimated arrival times for both the P and S waves at a sensor station (Figs. 1-5) ([0033]-[0156]; especially pages 2-3).

With regard to claim 3, Zhang discloses the data processor being adapted to calculate a plurality of estimated times of arrival of the P and/or S waves at a sensor station, based on a plurality of estimated times of origin for the microseismic event calculated from the picked arrival times of the p and S waves at a plurality of sensor stations other than the one at which the estimated times of arrival are to be calculated (Figs. 1-6) ([0033]-[0156]).

With regard to claim 4, Zhang discloses that the data processor is further adapted to display the picked arrival times and estimated arrival times in relation to each other such that the clustering pattern of the arrival times can be analyzed (Figs. 1-6) (Pages 2-6).

With regard to claim 5, Zhang discloses that the data processor is adapted to display information regarding the calculation of any particular estimated arrival time in response to the selection of the estimated arrival time by a user (Figs. 1-6) (Pages 2-6).

With regard to claim 6, Zhang discloses the data processor being adapted to calculate one or more estimated times of arrival for the P and/or S waves at each

sensor station in a network of a sensor stations r1,r2,r3, wherein for each sensor station the necessary estimated time or times of origin are calculated from the picked P and S waves at one or more of the other stations in the network (Figs. 1-6) ([0033]-[0156]).

With regard to claim 7, Zhang discloses that the data processor is adapted to receive seismic data from the sensor stations to pick arrival times for the P and S wave at each sensor station based on the seismic data ([0033]-[0156]).

With regard to claim 8, Zhang discloses that with a number of possible arrival times for a wave at a sensor station, the processor is adapted to compare the possible arrival times with any estimates calculated for the arrival time of the wave at the station in order to an arrival time of the wave at the station ([0033]-[0156]).

With regard to claim 9, Zhang discloses that the data processor is further adapted to select or modify one of the possible arrival times in order to arrive at a final picked arrival time based on the determination ([0033]-[0156], especially pages 3-5).

With regard to claim 10, Zhang discloses that the data processor is adapted to indicate which of the possible arrival times should be selected or modified in order to arrive at a final picked arrival time based on the determination ([0033]-[0156], especially pages 3-5).

With regard to claim 12, Zhang discloses a method of calculating an estimated time of arrival of a seismic or microseismic P or S wave at a sensor station r1, the method comprising the steps of:

- calculating an estimated time of origin for the seismic or microseismic event generating the P and S waves, based on a P to S wave velocity

ratio and picked arrival times of the P and S waves at a sensor station other the one for which the estimated time of arrival of the P or S wave is to be calculated (Figs. 1-5) ([0033]-[0156]).

- calculating the estimated time of arrival of the P or S wave, based on a P to S wave velocity ratio, the estimated time of origin of the seismic or microseismic event and, where the estimated arrival time of a P wave is to be calculated, a picked arrival time of the S wave at the sensor station for which the estimated arrival time of the P wave is being calculated or, where the estimated arrival time of an S wave is to be calculated, a picked arrival time of the P wave at the sensor station for which the estimated arrival time of the S wave is to be calculated(Figs. 1-5) ([0033]-[0156]).

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-3, 8-10 and 12 are rejected under 35 U.S.C. 102(b) as being anticipated by Audebert (WO0131364).

With regard to claim 1, Audebert discloses data processing appratus for calculating an estimated time of arrival of a seismic or microseismic P or S wave at a sensor location, comprising a data processor adapted to:

- calculate an estimated time of origin for the seismic or microseismic event generating the P and S waves, based on a P to S wave velocity ratio and picked arrival times of the P and S waves at a sensor station other the one for which the estimated time of arrival of the P or S wave is to be calculated (Page 2, Line 10 to Page 3, Line 25; Page 4, Line 11 to Page 13, Line 4) (Figs. 1-3).
- calculate the estimated time of arrival of the P or S wave, based on a P to S wave velocity ratio, the estimated time of origin of the seismic or microseismic event and, where the estimated arrival time of a P wave is to be calculated, a picked arrival time of the S wave at the sensor station for which the estimated arrival time of the P wave is being calculated or, where the estimated arrival time of an S wave is to be calculated, a picked arrival time of the P wave at the sensor station for which the estimated arrival time of the S wave is to be calculated (Page 2, Line 10 to Page 3, Line 25; Page 4, Line 11 to Page 13, Line 4) (Figs. 1-3).

With regard to claim 2, Audebert discloses the data processor being adapted to calculate estimated arrival times for both the P and S waves at a sensor station (Page 2, Line 10 to Page 3, Line 25; Page 4, Line 11 to Page 13, Line 4) (Figs. 1-3).

With regard to claim 3, Audebert discloses the data processor being adapted to calculate a plurality of estimated times of arrival of the P and/or S waves at a sensor station, based on a plurality of estimated times of origin for the microseismic event calculated from the picked arrival times of the p and S waves at a plurality of sensor

stations other than the one at which the estimated times of arrival are to be calculated (Page 2, Line 10 to Page 3, Line 25; Page 4, Line 11 to Page 13, Line 4) (Figs. 1-3).

With regard to claim 8, Audebert discloses that with a number of possible arrival times for a wave at a sensor station, the processor is adapted to compare the possible arrival times with any estimates calculated for the arrival time of the wave at the station in order to determine an arrival time of the wave at the station (Page 2, Line 10 to Page 3, Line 25; Page 4, Line 11 to Page 13, Line 4) (Figs. 1-3).

With regard to claim 9, Audebert discloses that the data processor is further adapted to select or modify one of the possible arrival times in order to arrive at a final picked arrival time based on the determination (Page 2, Line 10 to Page 3, Line 25; Page 4, Line 11 to Page 13, Line 4) (Figs. 1-3).

With regard to claim 10, Audebert discloses that the data processor is adapted to indicate which of the possible arrival times should be selected or modified in order to arrive at a final picked arrival time based on the determination (Page 2, Line 10 to Page 3, Line 25; Page 4, Line 11 to Page 13, Line 4) (Figs. 1-3).

With regard to claim 12, Audebert discloses a method of calculating an estimated time of arrival of a seismic or microseismic P or S wave at a sensor station, the method comprising the steps of:

- calculating an estimated time of origin for the seismic or microseismic event generating the P and S waves, based on a P to S wave velocity ratio and picked arrival times of the P and S waves at a sensor station other the one for which the estimated time of arrival of the P or S wave is

to be calculated (Page 2, Line 10 to Page 3, Line 25; Page 4, Line 11 to Page 13, Line 4) (Figs. 1-3).

- calculating the estimated time of arrival of the P or S wave, based on a P to S wave velocity ratio, the estimated time of origin of the seismic or microseismic event and, where the estimated arrival time of a P wave is to be calculated, a picked arrival time of the S wave at the sensor station for which the estimated arrival time of the P wave is being calculated or, where the estimated arrival time of an S wave is to be calculated, a picked arrival time of the P wave at the sensor station for which the estimated arrival time of the S wave is to be calculated (Page 2, Line 10 to Page 3, Line 25; Page 4, Line 11 to Page 13, Line 4) (Figs. 1-3).

Claims 1-3 and 12 are rejected under 35 U.S.C. 102(b) as being anticipated by Sayers (6067275).

With regard to claim 1, Sayers discloses data processing appratus for calculating an estimated time of arrival of a seismic or microseismic P or S wave at a sensor location, comprising a data processor adapted to:

- calculate an estimated time of origin for the seismic or microseismic event generating the P and S waves, based on a P to S wave velocity ratio and picked arrival times of the P and S waves at a sensor station other the one for which the estimated time of arrival of the P or S wave is to be calculated (Column 6, Line 16 to Column 8, Line 30) (Figs. 3-5a).

- calculate the estimated time of arrival of the P or S wave, based on a P to S wave velocity ratio, the estimated time of origin of the seismic or microseismic event and, where the estimated arrival time of a P wave is to be calculated, a picked arrival time of the S wave at the sensor station for which the estimated arrival time of the P wave is being calculated or, where the estimated arrival time of an S wave is to be calculated, a picked arrival time of the P wave at the sensor station for which the estimated arrival time of the S wave is to be calculated (Column 6, Line 16 to Column 8, Line 30) (Figs. 3-5a).

With regard to claim 2, Sayers discloses the data processor being adapted to calculate estimated arrival times for both the P and S waves at a sensor station (Column 6, Line 16 to Column 8, Line 30) (Figs. 3-5a).

With regard to claim 3, Sayers discloses the data processor being adapted to calculate a plurality of estimated times of arrival of the P and/or S waves at a sensor station, based on a plurality of estimated times of origin for the microseismic event calculated from the picked arrival times of the p and S waves at a plurality of sensor stations other than the one at which the estimated times of arrival are to be calculated (Column 6, Line 16 to Column 8, Line 30) (Figs. 3-5a).

With regard to claim 12, Sayers discloses a method of calculating an estimated time of arrival of a seismic or microseismic P or S wave at a sensor station, the method comprising the steps of:

- calculating an estimated time of origin for the seismic or microseismic event generating the P and S waves, based on a P to S wave velocity ratio and picked arrival times of the P and S waves at a sensor station other the one for which the estimated time of arrival of the P or S wave is to be calculated (Column 6, Line 16 to Column 8, Line 30) (Figs. 3-5a).
- calculating the estimated time of arrival of the P or S wave, based on a P to S wave velocity ratio, the estimated time of origin of the seismic or microseismic event and, where the estimated arrival time of a P wave is to be calculated, a picked arrival time of the S wave at the sensor station for which the estimated arrival time of the P wave is being calculated or, where the estimated arrival time of an S wave is to be calculated, a picked arrival time of the P wave at the sensor station for which the estimated arrival time of the S wave is to be calculated (Column 6, Line 16 to Column 8, Line 30) (Figs. 3-5a).

Intended Use Statements:

The "apparatus for," "adapted to" and "for adapting" clauses of claims 1-11 are essentially method limitations or statements or intended or desired use. Thus, these claims as well as other statements of intended use do not serve to patentably distinguish the claimed structure over that of the reference. See In re Pearson, 181 USPQ 641; In re Yanush, 177 USPQ 705; In re Finsterwalder, 168 USPQ 530; In re

Casey, 512 USPQ 235; In re Otto, 136 USPQ 458; Ex parte Masham, 2 USPQ 2nd 1647.

See MPEP § 2114 which states:

> A claim containing a "recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from the prior art apparatus" if the prior art apparatus teaches all the structural limitations of the claim. Ex parte Masham, 2 USPQ 2nd 1647
>
> Claims directed to apparatus must be distinguished from the prior art in terms of structure rather than functions. In re Danly, 120 USPQ 528, 531.
>
> Apparatus claims cover what a device is not what a device does. Hewlett-Packard Co. v. Bausch & Lomb Inc., 15 USPQ2d 1525, 1528.

As set forth in MPEP § 2115, a recitation in a claim to the material or article worked upon does not serve to limit an apparatus claim.

Conclusion

The cited prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Scott A. Hughes whose telephone number is 571-272-6983. The examiner can normally be reached on M-F 9:00am to 5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jack Keith can be reached on (571) 272-6878. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

SAH

JACK KEITH
SUPERVISORY PATENT EXAMINER